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## **AMENDING FRESHWATER FOR PRODUCTION OF *Litopenaeus vannamei* IN EARTHEN PONDS**

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Inland culture of the Pacific white shrimp *Litopenaeus vannamei* in ponds filled with low-salinity ground water is attracting attention as a means for farmers to diversify production and increase profits. Catfish farmers across the southern United States that have utilized low-salinity ground water for catfish production now are beginning trials to grow *L. vannamei*. However, the availability of low-salinity ground water may not necessarily be a requirement for channel catfish farmers considering shrimp culture as an alternative. The ionic composition of low-salinity groundwater available in the southern US often differs from dilute seawater at the same salinity. Inland shrimp producers who confronted this problem in 2001 solved it by using specific fertilizers to provide the missing ions. Because low-salinity ground water can be amended to supply one or more deficient ions, it should be possible to amend water freshwater aquifers to support successful shrimp culture.

The growing season for *L. vannamei* in earthen ponds in the southern United States is limited to May through September. Generally, one crop is possible per season unless, but two crops per season are possible if post-larval shrimp (PLs) have been nursed to a larger size ("head started"). Because shrimp farming would be a new activity for existing catfish farms, it is unlikely that farms will have facilities to head start PLs purchased from a hatchery. However, purchasing older PLs may permit two crops to be grown.

The objectives of this study were to determine if *L. vannamei* could be produced successfully in amended freshwater and if two crops per season were possible by stocking ponds with PL 25 shrimp. Six 0.1-ha earthen ponds were filled with freshwater (total alkalinity 154 mg/L as CaCO<sub>3</sub>; total hardness 188 mg/L as CaCO<sub>3</sub>). Salinity was increased to 0.7 – 1.0 g/L through addition of salt and potassium fertilizer. Three ponds were stocked in late May with *L. vannamei* PL 15 (39 PL/m<sup>2</sup>) and grown for the entire growing season. The other three ponds were stocked PL 25 shrimp (25 PL/m<sup>2</sup>) and grown for 55 – 65 days. Shrimp in all ponds were fed a commercially formulated shrimp diet (35% crude protein), 7 d/wk. The shrimp population was sampled weekly to monitor growth. Each pond was equipped with a 0.37-kW electric paddlewheel aerator.

Freshwater was amended successfully to permit shrimp production. Stocking a PL 25 shrimp did not appear to confer any advantage in terms of growth. Mean shrimp weight was similar in ponds stocked with either PL 15 or PL 25 shrimp during the first 55 days of culture. It is unfeasible to produce two crops of shrimp during the growing season by stocking PL 25 shrimp.